

Claims

1. A locking system (1) for a safety switch having a read head (2) and an actuator (3) which have a first and a second component set (10, 14) respectively with electric and/or electronic components which may be caused to interact without electric contact and thereby control the safety switch, **characterized in that** the actuator (3) may be locked on the read head (2) by means of a counterelement (12) operating in conjunction with a switchable electromagnet (7), and in that the locking may be controlled by means of a sensor element (31, 32, 33, 34) the output signal of which is a function of the magnetic field which may be generated by the electromagnet (7).
2. The locking system as claimed in claim 1, wherein the sensor element (31, 32, 33, 34) generates an analog output signal concerning the intensity of the magnetic field which may be generated by the electromagnet (7).
3. The locking system as claimed in claim 1 or 2, wherein the level of the locking force caused by the magnetic field of the electromagnet (7) may be controlled by the sensor element (31, 32, 33, 34).
4. The locking system as claimed in one of claims 1 to 3, wherein the level of the locking force is adjustable.

5. The locking system as claimed in one of claims 1 to 4, wherein the sensor element (31, 32, 33, 34) measures the magnetic field which may be generated by the electromagnet (7) and, the geometric configuration and the magnetic properties of the read head (2) and of the actuator (3) being taken into account, determines from the measured magnetic field the locking force acting between read head (2) and actuator (3).
6. The locking system as claimed in one of claims 1 to 5, wherein the sensor element (31, 32, 33, 34) is mounted on the actuator (3).
7. The locking system as claimed in one of claims 1 to 6, wherein the sensor element (31, 32, 33, 34) is mounted on the read head (2).
8. The locking system as claimed in one of claims 1 to 7, wherein two switching states may be assumed by the sensor element (31, 32, 33, 34) as a function of the magnetic field which may be generated by the electromagnet (7), and in that the second control group (14) mounted in the actuator (3) is controlled by the switching states of the sensor element (31, 32, 33, 34).
9. The locking system as claimed in one of claims 1 to 8, wherein a generator coil (35) is mounted in the actuator (3) for supply of electric energy to the second component set (14).
10. The locking system as claimed in claim 9, wherein the sensor element (31, 32, 33, 34) is connected electrically in series to the generator coil (35).

11. The locking system as claimed in one of claims 1 to 10, wherein a plurality of sensor elements (31, 32, 33, 34) is configured the output signals of which elements are interconnected as desired for the monitoring of locking.
12. The locking system as claimed in one of claims 1 to 11, wherein the position of the sensor element (31, 32, 33, 34) may be adjusted by adjusting means (30).
13. The locking system as claimed in one of claims 1 to 12, wherein the sensor element (31, 32, 33, 34) has a reed contact (37).
14. The locking system as claimed in one of claims 1 to 13, wherein the sensor element (31, 32, 33, 34) has a Hall element (38).
15. The locking system as claimed in one of claims 1 to 14, wherein the counterelement (12) and/or the electromagnet (7) is/are rigidly connected to an associated base element (13) mounted on the actuator (3) and accordingly the read head (2) is/are pivotable relative to such base element (13).